

Abstract

The present invention relates to *in vitro* cultured skin substitutes, and in particular to *in vitro* cultured skin substitutes that have improved barrier function. In some embodiments, improved barrier function is a result of improved culture conditions, while in other embodiments, improved barrier function results from genetic modification of keratinocytes. Improved culture conditions to improve barrier function include organotypic culture in the presence of linoleic acid and/or linoleic acid at about 75% humidity. Suitable genetic modifications for improving barrier function includes transfection with a DNA construct capable of expressing GKLF.

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